U.S. DOT
Federal Railroad Administration

DOE Rail TEC
Winter Meeting

February 6, 2008, San Antonio, TX

Evaluation of Shortline Railroads
Tasked for the Transportation of Spent Nuclear Fuel

Evaluation of Shortline Railroads

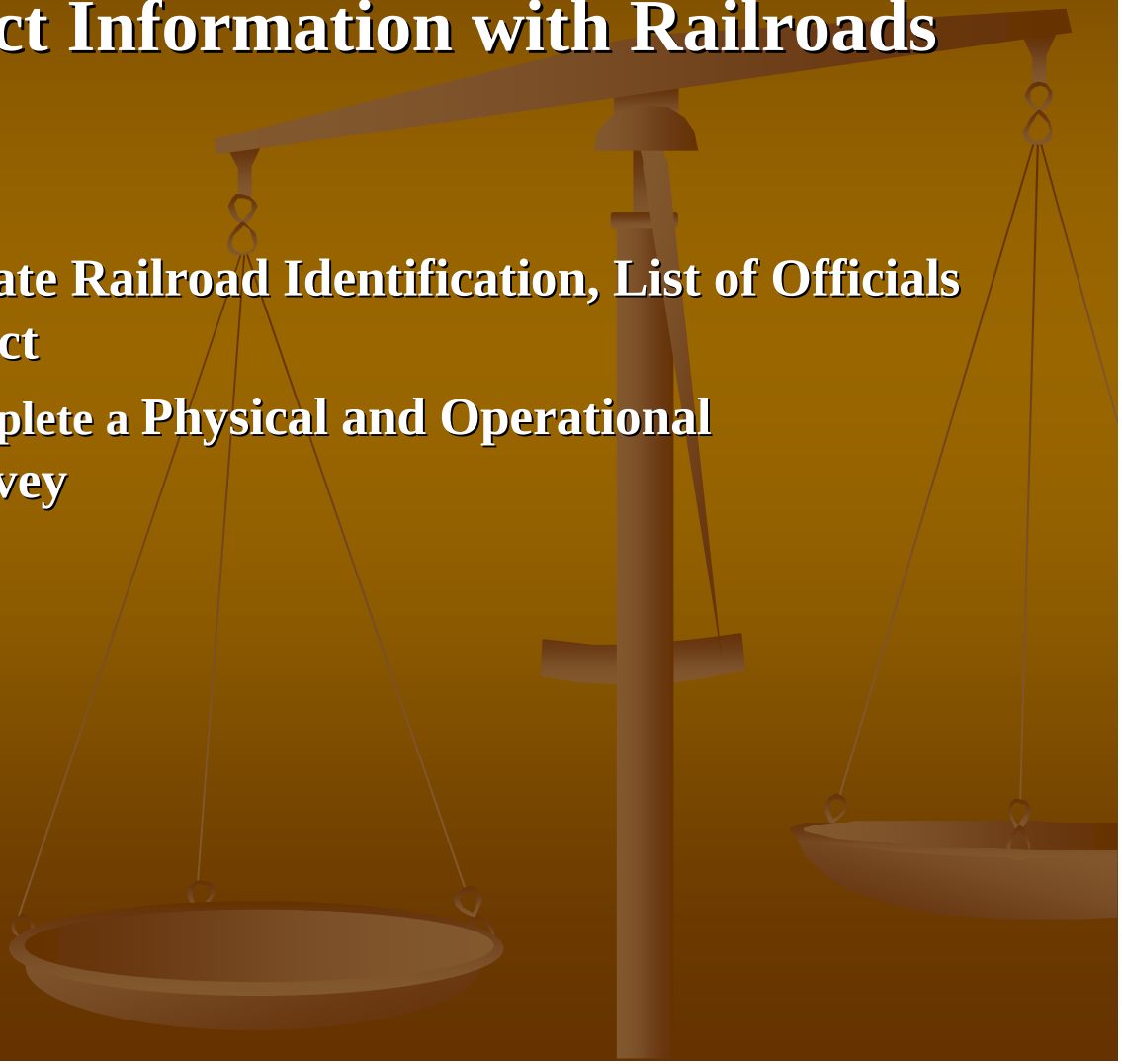
- **Task:**
  - **Identify Shortline Railroads Serving Nuclear Power Plants or Involved in the Transportation Link**
  - **Establish Contact Information with Railroads Officials**
  - **Field Review of each Railroad's Physical and Operational Infrastructure**
  - **Qualify each Railroads Present Operational Status Against a Safe Acceptable Standard**
  - **Facilitate Upgrades to Meet Safe Acceptable Standards**

Evaluation of Shortline Railroads

- **Identify Shortline Railroads Serving Nuclear Power Plants or Involved in the Transportation Link**
  - **Began Contacting 18 of 28 identified Shortline Railroads to Verify Validity of Existing Information**
  - **Received feedback from 6 of the 18 Shortline Railroads contacted**
  - ***In September, 2007, we conducted a pilot assessment of the Winchester & Western Railroad, they would provide service to the Hope Creek and Salem 1 & 2 power plants located in southern New Jersey***

Evaluation of Shortline Railroads

- **Establish Contact Information with Railroads Officials**
  - **Creating an Accurate Railroad Identification, List of Officials and Point of Contact**
  - **Have Railroads Complete a Physical and Operational Infrastructure Survey**



Evaluation of Shortline Railroads

- Physical and Operational Infrastructure Survey Information

DOE SHIPPING POINT –

RAIL ACCESS -
LOCATION –
CONTACT –
PHONE –

SERVING RAILROAD –

LOCATION –
CONTACT –
PHONE -
E-MAIL -

Evaluation of Shortline Railroads

- Physical and Operational Infrastructure Survey Information

TRACK INFORMATION

CLASS ONE RAILROAD CONNECTION –

CLASS of TRACK -

RAIL WEIGHT

≥100 LBS -

<100 LBS -

TRACK OWNERSHIP -

TRACK RESTRICTIONS -

Evaluation of Shortline Railroads

- Physical and Operational Infrastructure Survey Information

O P INFORMATION

METHOD of OPERATION –

Signaled Territory -

Dispached -

Joint Operations -

Evaluation of Shortline Railroads

- Physical and Operational Infrastructure Survey Information

MECHANICAL INFORMATION

EQUIPMENT RESTRICTIONS -

Evaluation of Shortline Railroads

- Physical and Operational Infrastructure Survey Information

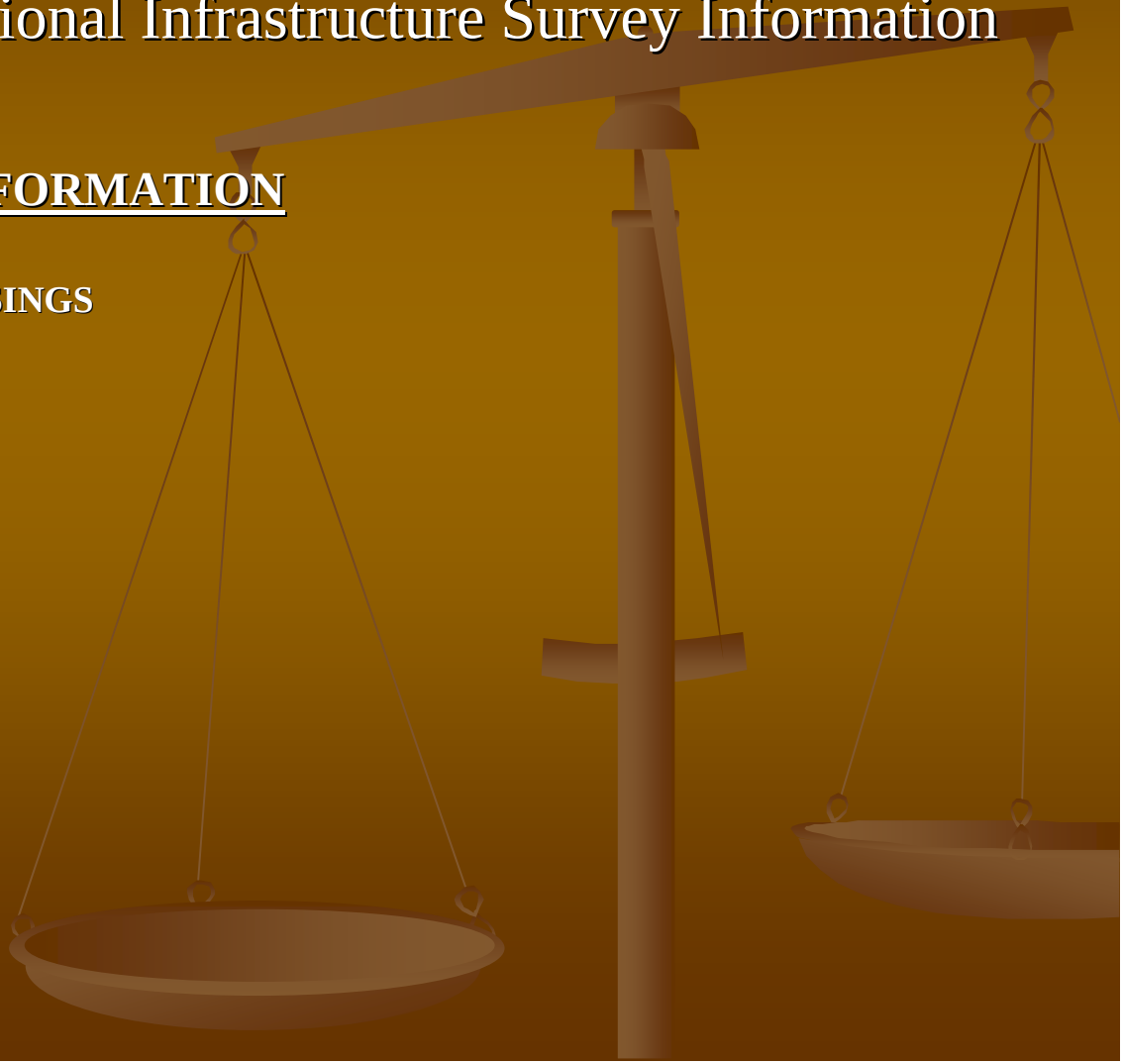
HM INFORMATION

HM REGISTERED -

HM TRAINING -

Evaluation of Shortline Railroads

- Physical and Operational Infrastructure Survey Information



GRADE CROSSING INFORMATION

NUMBER of GRADE CROSSINGS

ACTIVE -

PASSIVE -

Evaluation of Shortline Railroads

- Physical and Operational Infrastructure Survey Information

COMMENTS

Evaluation of Shortline Railroads

- Physical and Operational Infrastructure Survey Information

TRACK INFORMATION

CLASS ONE RAILROAD CONNECTION –

CLASS of TRACK –

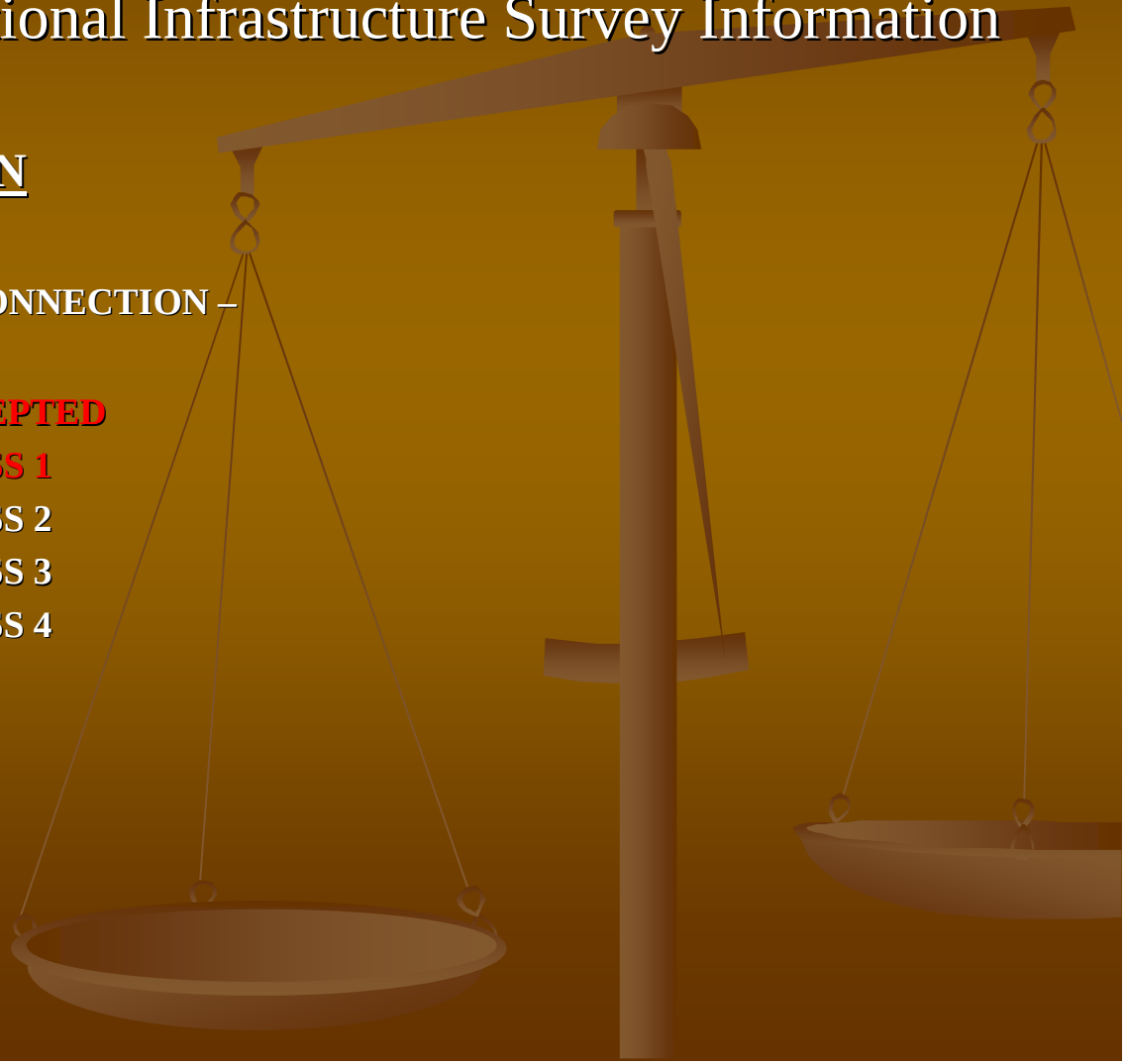
EXCEPTED

CLASS 1

CLASS 2

CLASS 3

CLASS 4



Evaluation of Shortline Railroads

EXCEPTED TRACK IN USE

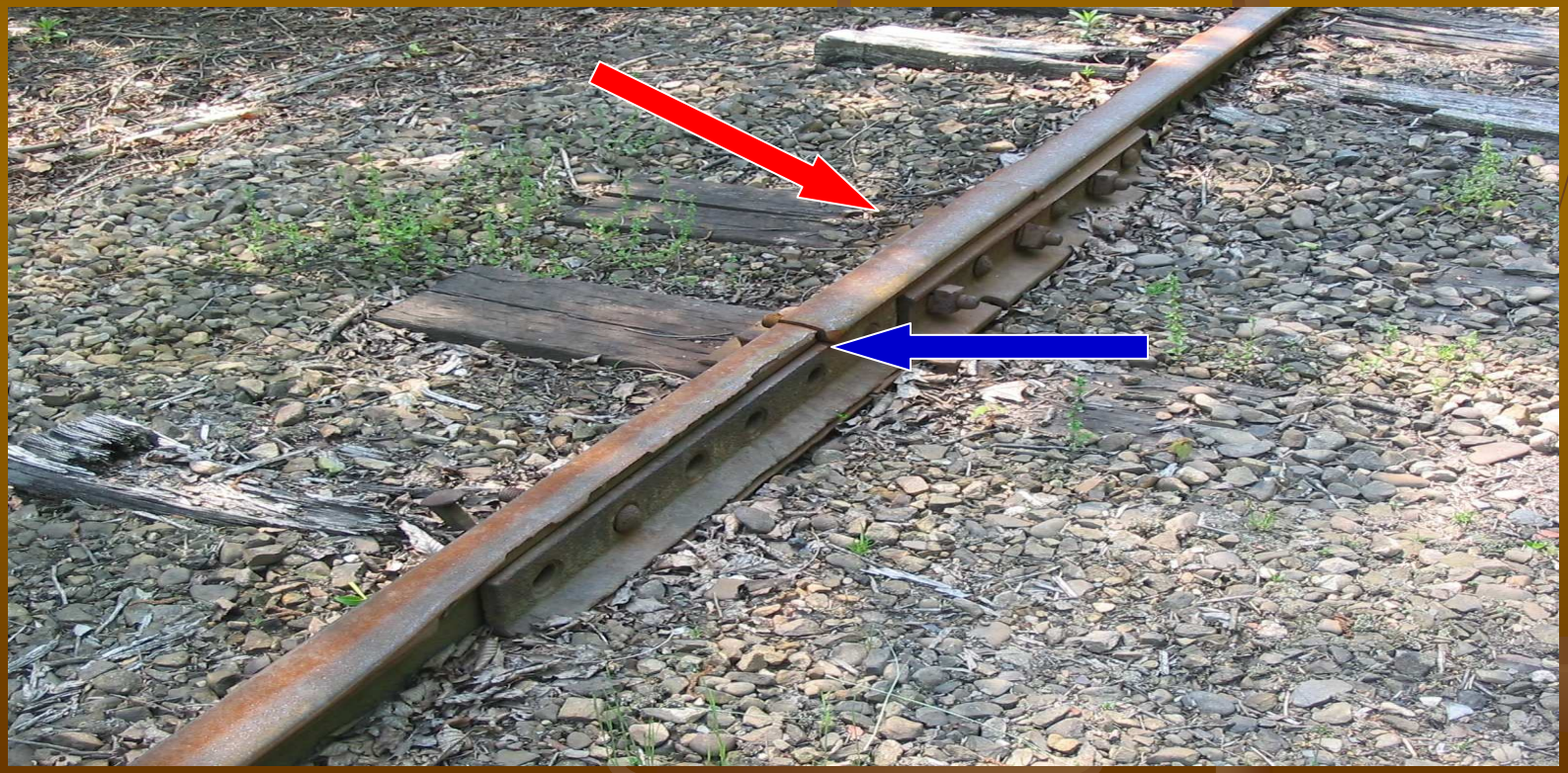
Evaluation of Shortline Railroads

EXCEPTED TRACK IN USE

Evaluation of Shortline Railroads

EXCEPTED TRACK IN USE

DUTCHMAN and MISSMATCH



Evaluation of Shortline Railroads

EXCEPTED TRACK IN USE

DUTCHMAN and MISSMATCH

Evaluation of Shortline Railroads

- Physical and Operational Infrastructure Survey Information

TRACK INFORMATION

CLASS ONE RAILROAD CONNECTION –

CLASS of TRACK -

RAIL WEIGHT

≥100 LBS -

<100 LBS -

Evaluation of Shortline Railroads

RAIL WEIGHT

≥100 LBS -

<100 LBS –

Evaluation of Shortline Railroads

- Physical and Operational Infrastructure Survey Information

TRACK INFORMATION

CLASS ONE RAILROAD CONNECTION –

CLASS of TRACK -

RAIL WEIGHT

≥100 LBS -

<100 LBS -

TRACK OWNERSHIP -

TRACK RESTRICTIONS -

Evaluation of Shortline Railroads

TRACK RESTRICTIONS

CLEARENCE

Evaluation of Shortline Railroads

TRACK RESTRICTIONS

BRIDGE WEIGHTS

Wooden Truss Bridge

Evaluation of Shortline Railroads

TRACK RESTRICTIONS

TUNNELS

Evaluation of Shortline Railroads

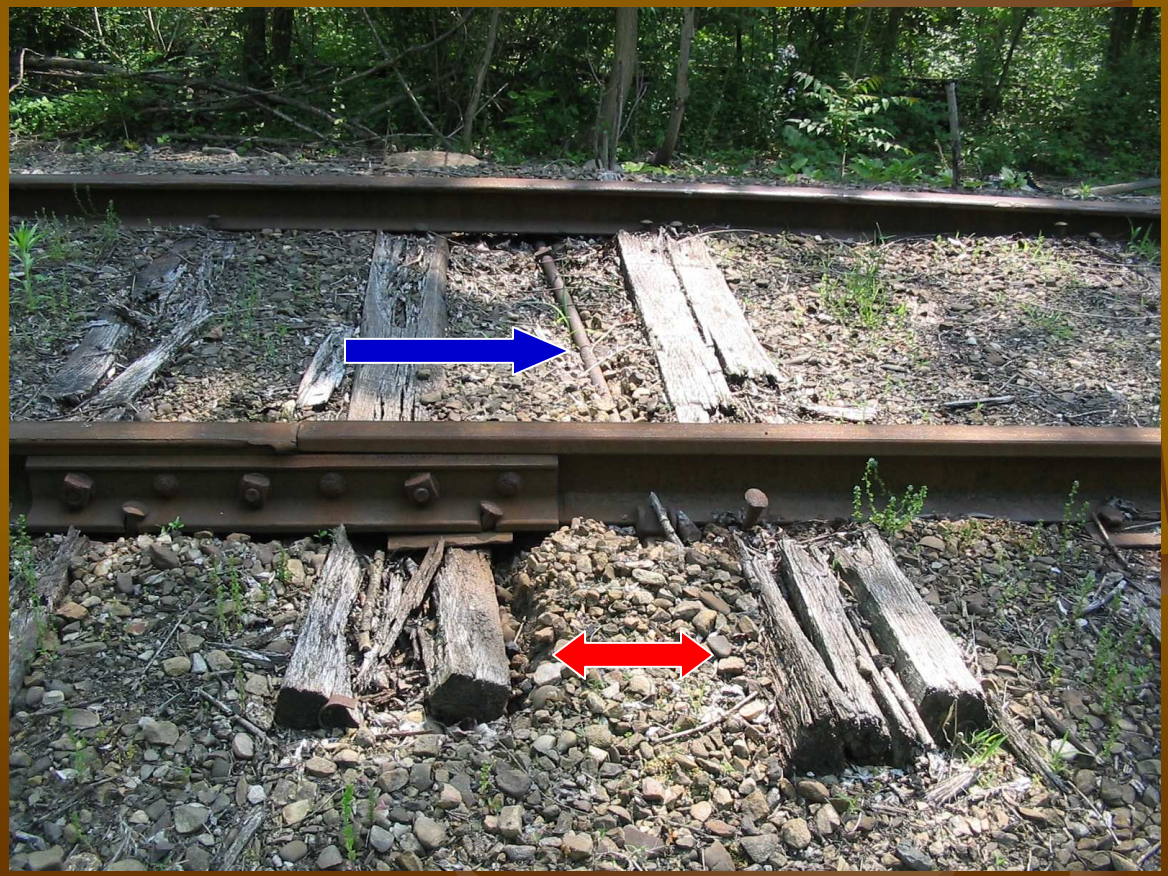
TRACK RESTRICTIONS

TUNNEL CONDITION

Evaluation of Shortline Railroads

TRACK RESTRICTIONS

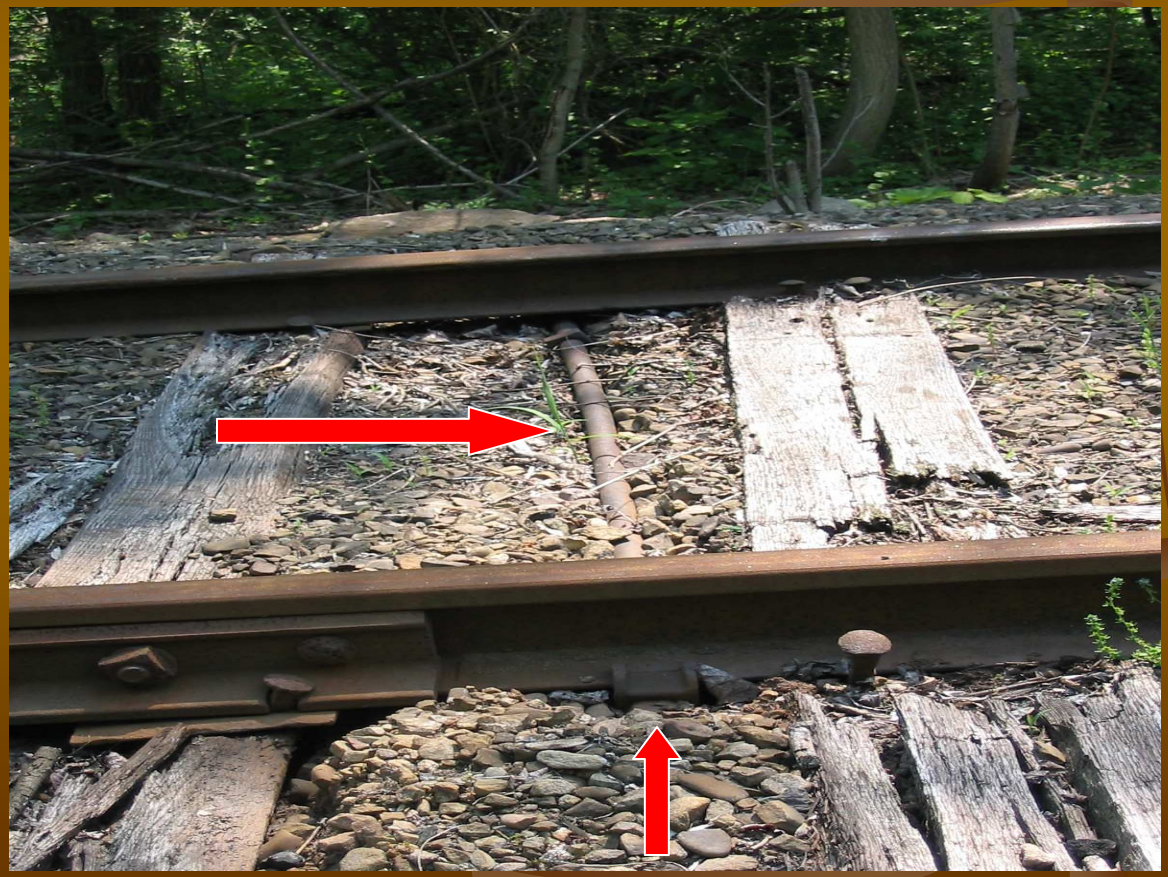
TIE CONDITION with GAUGE ROD



Evaluation of Shortline Railroads

EXCEPTED TRACK

GAUGE ROD



Evaluation of Shortline Railroads

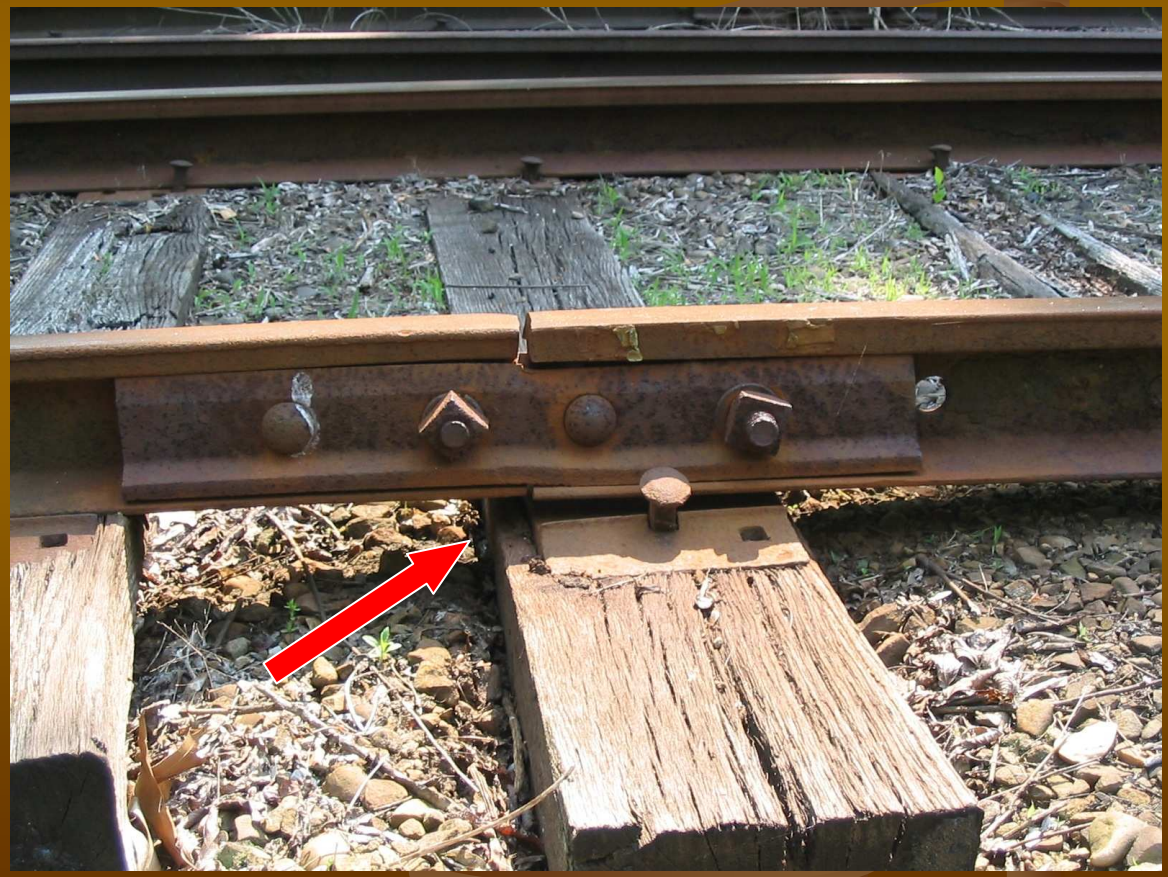
EXCEPTED TRACK

SHARP CURVES

Evaluation of Shortline Railroads

EXCEPTED TRACK

RAIL NOT SEATED IN PLATE



Evaluation of Shortline Railroads

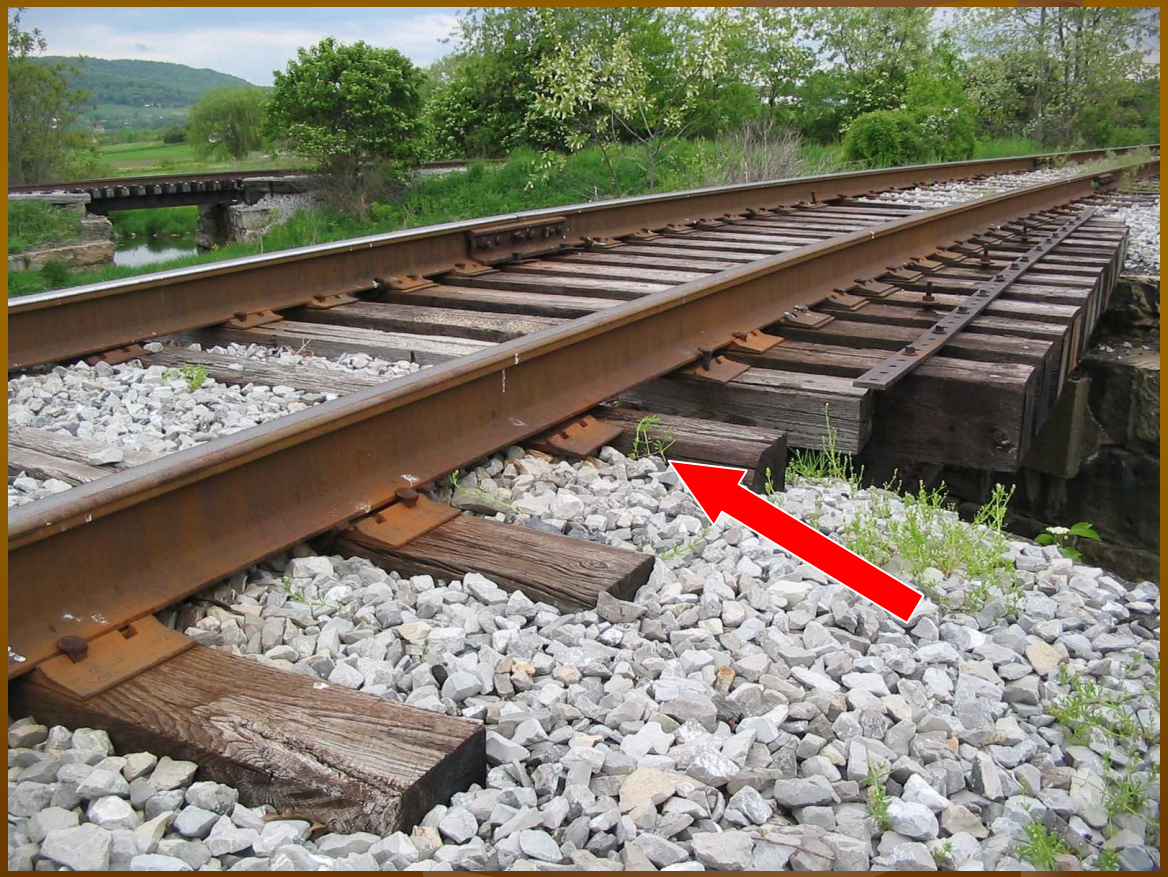
EXCEPTED TRACK

BRIDGE CONDITION

Evaluation of Shortline Railroads

EXCEPTED TRACK

BRIDGE APPROACH CONDITION



Evaluation of Shortline Railroads

FRA Tack Classes are Based Upon Maximum Allowable Speeds:

TRACK CLASS, 1 ≤ 10 MPH THROUGH CLASS 7 ≤ 100 PLUS MPH

TIGHTER TOLERENCES = HIGHER SPEEDS

LESS TOLERENCES = LOWER SPEEDS

EXCEPTED TRACK

10 MPH

GENERALY ONLY REQUIRES AN INSPECTION ONCE EVERY 30 DAYS,

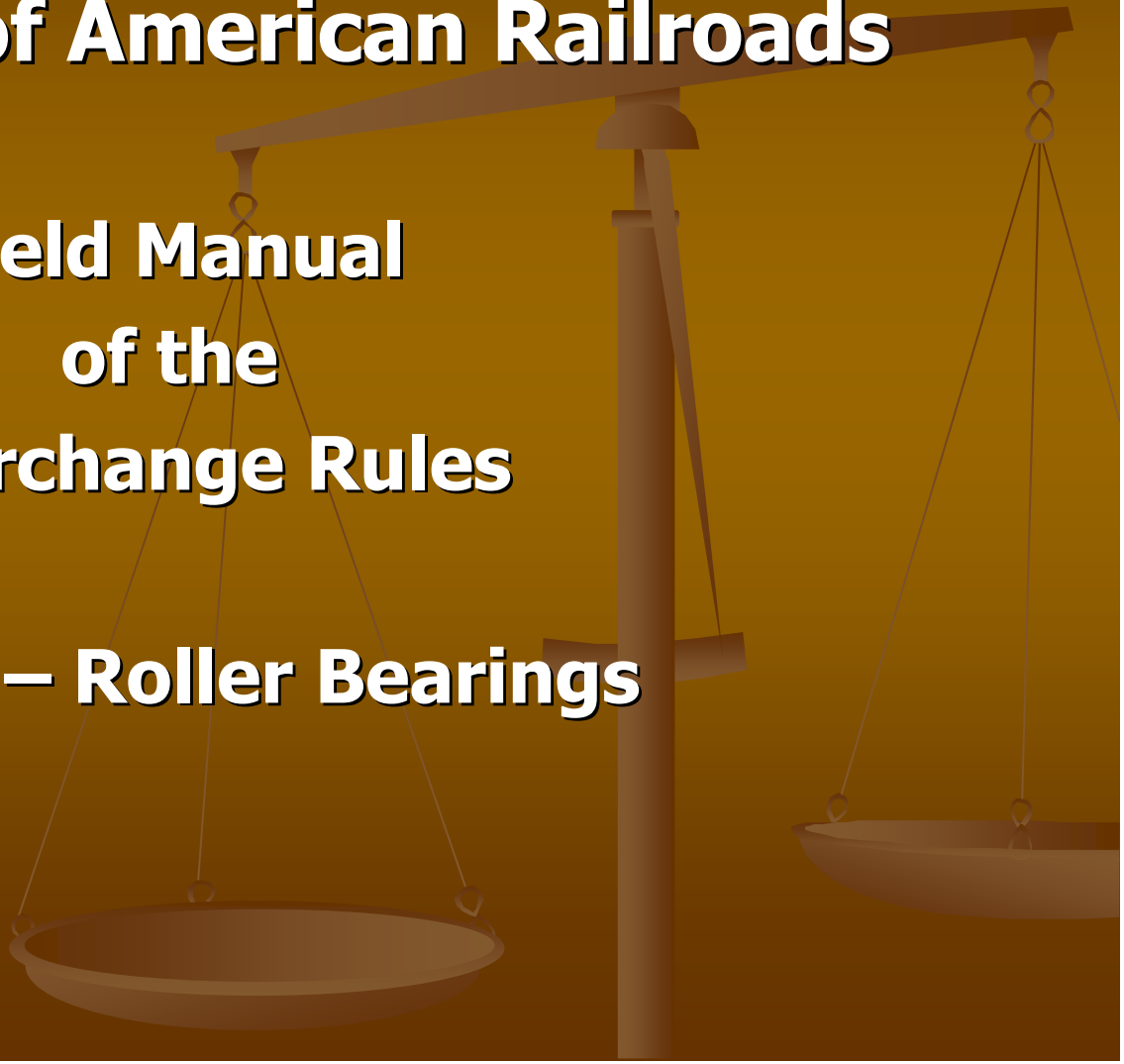
RAILROADS MUST COMPLY WITH GAUGE MEASUREMENT.

Evaluation of Shortline Railroads

Association of American Railroads

Field Manual
of the
Interchange Rules

Rule 36 – Roller Bearings



Evaluation of Shortline Railroads

Rule 36 – Roller Bearings

a. Wear Limits, Gauging, Cause for Renewal

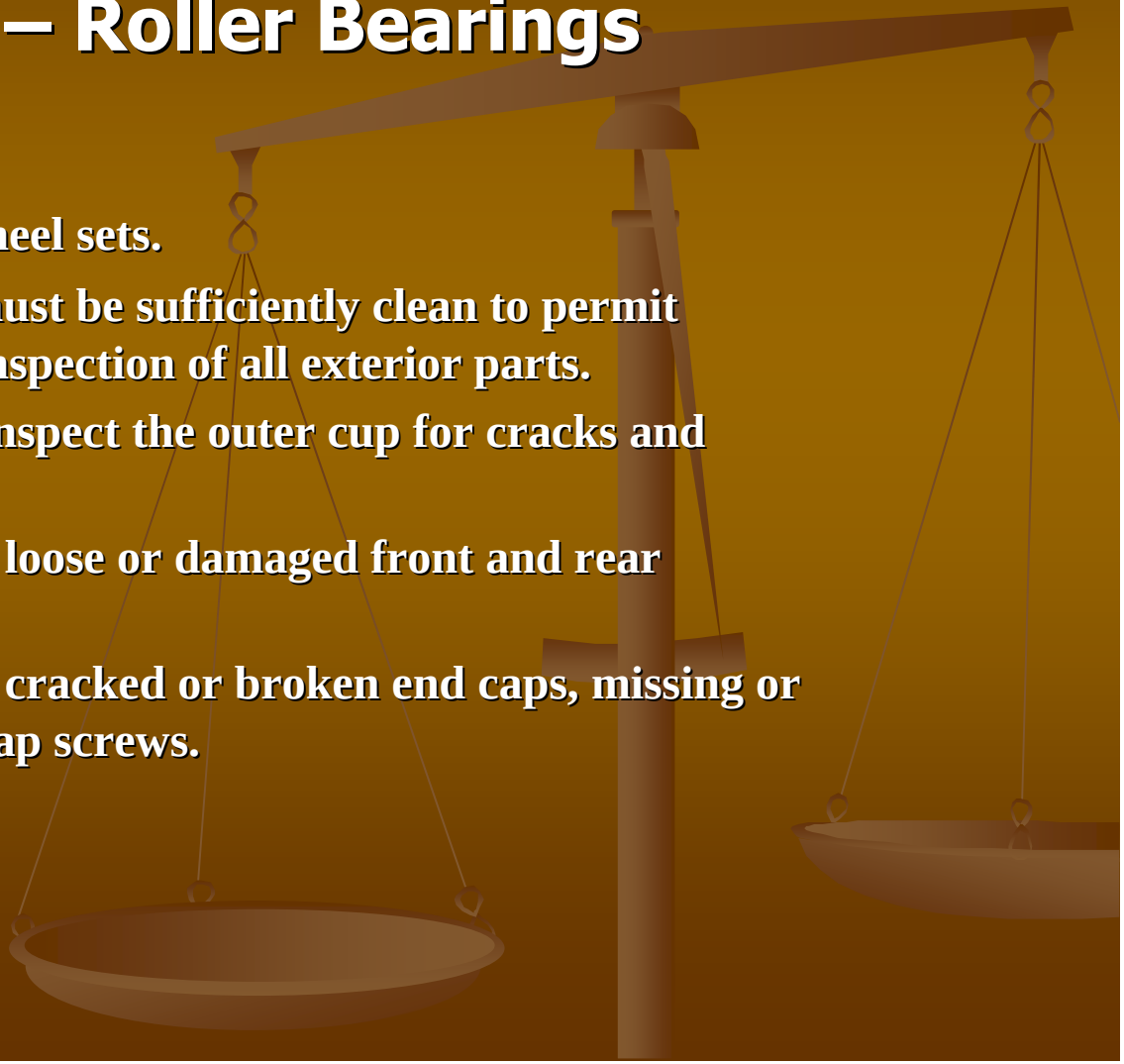
1. Derailment

a. Major Derailment. Wheel sets must be removed and handled in accordance with the Wheel and Axle Manual and roller bearings must be removed and disassembled for inspection and necessary repairs.

b. Minor derailment. Derailed trucks on empty or loaded cars involved in a derailment at a speed of not over 10 miles per hour or which have not moved on the ground more than 200 feet. Inspect bearings as follows:

Evaluation of Shortline Railroads

Rule 36 – Roller Bearings



1. Remove wheel sets.
2. Bearings must be sufficiently clean to permit adequate inspection of all exterior parts.
3. Carefully inspect the outer cup for cracks and breaks.
4. Inspect for loose or damaged front and rear seals.
5. Inspect for cracked or broken end caps, missing or loose end cap screws.

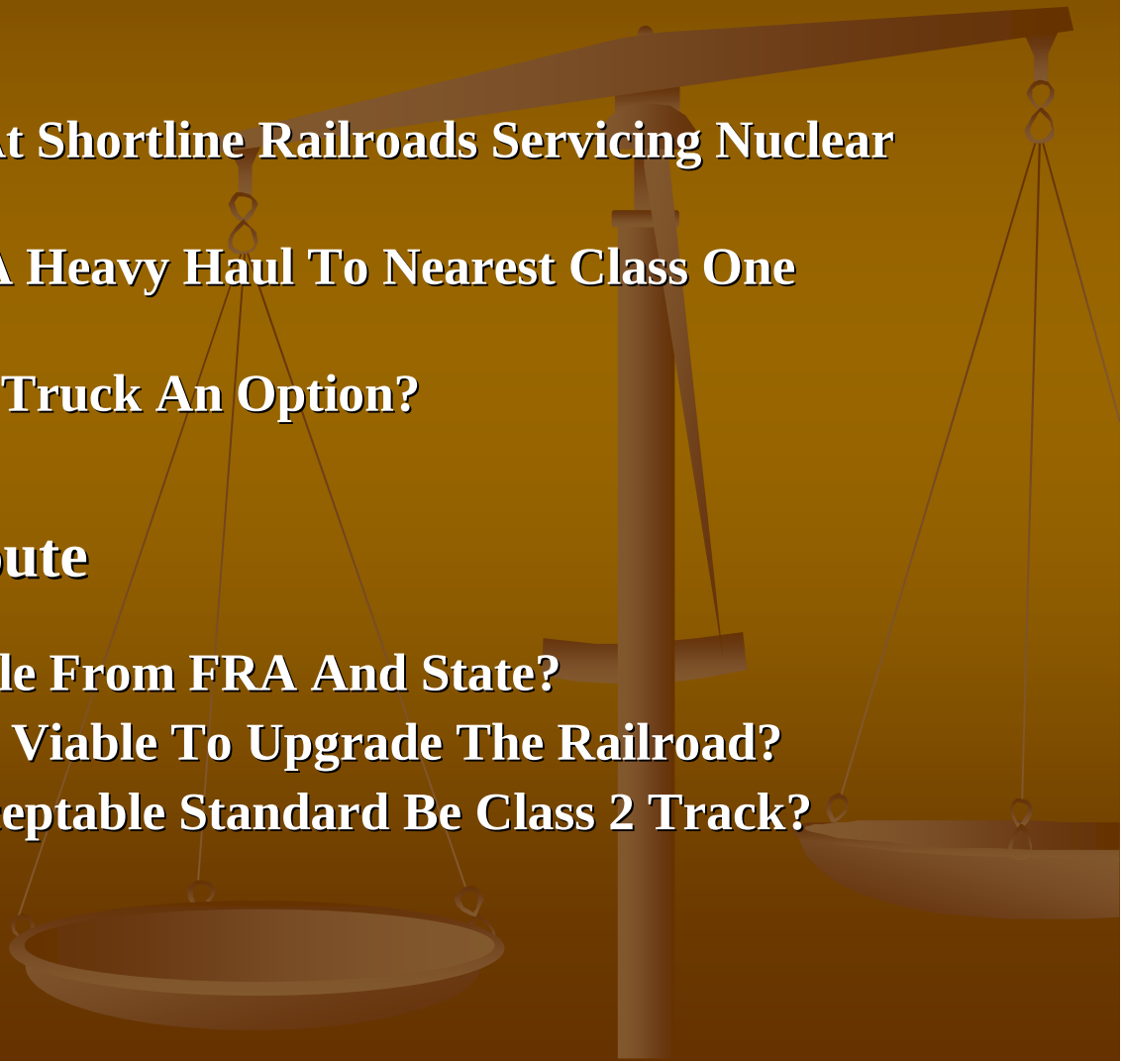
Evaluation of Shortline Railroads

Rule 36 – Roller Bearings

6. Inspect for loose backing rings.
7. Inspect bearing in accordance with the guidelines in Rule 36.A.3
8. Check for bent axle in accordance with Rule 43.E.5
9. If these checks are satisfactory, continue wheel sets in service. Otherwise, the bearings must be removed, disassembled and inspected for damage.

c. Cars arriving home shops, including private line and contract shops, without record of roller bearings disassembled for inspection per paragraph a. above.

Evaluation of Shortline Railroads



Conclusions,

- **Need For In-depth Look At Shortline Railroads Servicing Nuclear Power Plants!**
- **Options To Transport VIA Heavy Haul To Nearest Class One Railroad!**
- **Is Barge Or Legal Weight Truck An Option?**

If Rail Is The Logical Route

- **Are There Grants Available From FRA And State?**
- **Would It Be Economically Viable To Upgrade The Railroad?**
- **Should The Minimum Acceptable Standard Be Class 2 Track?**

Evaluation of Shortline Railroads

As found throughout most
of our Federal Regulations
a give and take approach
is the rule of LAW!

Presented by: Mel Massaro
Federal Railroad Administration